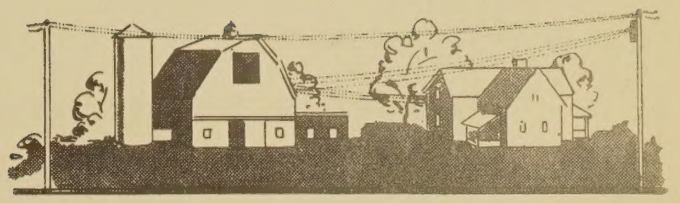
WIRING PROCEDURES MANUAL . . .

REA



RURAL ELECTRIFICATION ADMINISTRATION • U. S. DEPARTMENT OF AGRICULTURE

ORGANIZE A WIRING PROGRAM

Your cooperative finances the construction of electric lines with funds allotted by REA. The revenue obtained from the sale of electric energy to your members will enable you to operate your system and to make repayments to the Government. To operate successfully, it will be necessary to connect the required number of members and see that they install adequate and safe wiring. REA is interested in helping you work out a wiring program that will enable each of your members to obtain a safe, adequate installation in the shortest possible time so that farms will be ready for service when the lines are completed.

We ask that you read this booklet thoroughly and suggest that you formulate your wiring program on the information it contains. We recognize that your local situation will determine the extent to which this information can be used. In any event, we strongly recommend that you formulate plans for a program that can be carried out effectively to assist all your members to obtain adequate and safe wiring.

STEP-BY-STEP PROCEDURE FOR GROUP WIRING PROGRAM

Experiences of many cooperatives that have effectively carried out a group wiring program indicate that the following step-by-step procedure can be successful in areas where the cooperatives secure the full cooperation of their members and contractors. The group wiring program is simply a uniform approach in all sections of the cooperative area to make certain that new members have available competent wiring contractors to do their work at fair prices.

Three factors which have contributed to the high cost of rural wiring installations are:

(1) Lack of attention of cooperative officials to the effective planning and conduct of adequate wiring programs.

(2) Local contractors buying materials in small quantities at high prices.

(3) Contractors' loss of time and expense soliciting work over widely separated areas, without any standard upon which to bid. Each man has been figuring on doing the work in a different manner, and the member does not know who is actually giving the better price.

A group wiring plan, effectively carried out, solves most of these problems.

Under the group wiring plan the contractor eliminates the cost of solicitation. All contractors bid on one standard installation (made in compliance with REA wiring specifications). All work is located in one area, thereby saving travel expense between jobs. The contractor is able to purchase his materials in larger quantities at lowest trade prices, which results in substantial savings to the members. In order to get lowest wholesale price on wiring materials, contractors on some cooperatives group their orders and place them through one supplier.

Many cooperatives, with REA financing, install the meter loops for their members. We recommend, regardless of whether it is furnished by the cooperative or the member, that the same contractor who installs the meter loop also be the contractor selected to do the farmstead wiring. In this way, the best possible prices can be obtained to the advantage of cooperative as well as the member.

Officials of the cooperative, before organizing the group wiring

program, should determine the number of farms to be wired and designate on maps the areas in which the construction is to take place. Much can be done by cooperative officials to determine their members' wiring needs at the time they are coordinating the staking of the line with locating service entrances. It is important that the cooperative designate whether the meter loop shall be on the yardpole or main residence building.

A SEVEN STEP PROGRAM

Timing is important in carrying out the group wiring program. Therefore Step I should not be taken until the cooperative is sure that the farmsteads to be wired will receive service within 60 to 90 days.

STEP I -

A meeting of all wiring contractors should be called.

(A) Explain the group wiring plan.

1. Be sure to have a map showing the areas and number of farms to be wired in each.

(B) Have local wiring inspector discuss specifications and code requirements.

(C) Local contractors should propose a group wiring schedule of fair prices, after being advised that the prices are based on the assumption that certain specific areas will be assigned to each contractor; and further - that the cooperative will obtain the Wiring Agreement (Form AL-63B) in advance from the members, as hereinafter described.

(D) The contractors will see the value of this program more readily if each man is assured that he will be assigned a fair proportion of the work to be done. The success of the plan rests in dividing the work among the contractors in accordance with their ability, and in their offering fair unit prices. Contractors should be advised that the services of all are needed in order to get the houses wired by the time the lines have been constructed. Each contractor should agree to stay in the territory assigned to him.

(E) Find out how many contractors will participate in the group wiring program.

1. Ascertain the production and organization setup of each cooperating contractor and the number of farmstead wiring installations each can handle in a 30-day period.

2. Tentatively assign territories on basis of cooperative area that will receive electric service within next 60 days.

(F) This alternate bidding method may be used for carrying out the wiring program when cooperative wishes to take bids from all contractors and award the contract to the low bidder.

1. Low bidder to receive copies of wiring agreements signed by members.

2. Cooperative should be positive that the low bidder is equipped with crews adequate to wire all farms prior to completion of line construction.

3. This plan, to be successful, must result in low unit prices for farmstead wiring which would stand up under competition from other contractors.

4. The procedure for securing the cooperation of members as suggested in Steps II through VI should be followed, making allowance for the fact that only one low bidding contractor will carry out the work throughout the area.

STEP II

Send each prospective member a good letter. Tell them about the meeting recently held with the contractors. Announce the group meeting. Urge the entire family to attend. (See suggested letters in the back of this booklet.) In your co-op newsletter give this same information.

STEP III

(A) It is now necessary to explain directly to members and their families the value of this organized wiring plan. Hold meetings over the entire area just prior to actual construction, to outline:

1. How to plan for farmstead wiring.

2. What has been done to lower the cost of wiring by the cooperative.

3. The benefits of cooperating with the contractor assigned to the territory.

4. The requirements of members to sign bona fide Wiring Agreements (AL-63B or AL-63D) as soon as possible to avoid delay in line construction.

(b) Order of business at group meetings:

1. Get record of members in attendance.

2. Distribute booklets and other material on farmstead wiring.

3. Give complete discussion of how to plan farmstead wiring and have installation materials and displays on hand for demonstrations of practical use of equipment and good lighting. (You might obtain the aid of County Extension Service to assist in presenting demonstrations. Actual installations often prove helpful.)

4. If possible have your selected wiring inspector outline the need for safe, adequate and efficient wiring and the need for complete inspection.

5. Distribute Contractor's Proposal for Wiring installations (Form AL-63C) containing unit prices agreed upon by the contractors.

6. Explain how the group wiring program operates. Remind the members that by filling out the Group Wiring Agreement (Form AL-63B) they are giving the designated contractor the right to wire their premises.

7. For those members in attendance, who are not participating in the Group Wiring Agreement (Form AL-63B), explain that the cooperative would like to know that they will be ready for electric service when it reaches their premises and therefore they should fill out the form "Agreement to Wire." (AL-63D).

8. Remind all members, whether participating in the group wiring plan or not, that they should not pay more than 80% of the total cost of the wiring installation until after a certificate of inspection and approval has been obtained.

9. Give each member the names of contractors who will install wiring for standard unit prices. Introduce the contractors who will be working in each specified area.

10. Outline what members who desire financing under Section 5 Loans should do to secure financing. No installations should be made under this financed program until specific approval has been given by the credit committee or designated cooperative official.

11. Open meetings for questions from members present.

12. Close meeting with cooperative message.

STEP IV.

Follow up on local meeting by mailing informative letter and wiring booklet, wiring check list, wiring agreement form, list of unit prices and names of group wiring contractors to all members not in attendance at local meetings. Keep members informed all during the construction stages on the activities of the wiring contractors and the inspector in their areas. This is to be accomplished by newsletters or personal contact from the wiring inspector as he makes inspections in the area.

STEP V.

Before the wiring contractor begins work in his designated area, he should be given copies of all the Group Wiring Agreements (AL-63B) received from member in his area. He should be furnished copies of Contractor's Proposal for Wiring Installation, (AL-63C) for use in making his contracts with each member. The contractor will then visit members' premises and measure for the materials required. To the Form AL-63C we suggest he add Form AL-63F, showing the location of all outlets and the cost of the farmstead wiring installation in accordance with the schedule of unit prices.

STEP VI

The contractor will then deliver his materials to each member, collect a minimum down payment of not more than 5%, and, if they did not do so on the previous trip, have the member sign the Proposal Form (Form AL-63C). This form of contract is suggestive and if contractors prefer their own equivalent forms, this should be satisfactory with the cooperative.

STEP VII

The contractor should obtain the meter base and other equipment furnished by the cooperative and at the time he obtains this equipment he should deposit the inspection fee at the cooperative office. When he has

completed his work, he should notify the wiring inspector that he is ready to have his installation inspected.

SPECIFICATIONS AND FORMS

For the protection of members against the hazards of defective wiring and for the protection of the electric distribution organization, all wiring installations, whether cash or financed, are to be made in accordance with "American Standard," the latest issue of the National Electrical Code, revising Section 2110. Installations must be inspected and approved by an accredited inspector whose qualifications have been accepted by the Rural Electrification Administration, before receiving electric service from the cooperative's lines.

Since the National Electrical Code is not readily understood or interpreted by laymen and many contractors, the REA Wiring Specifications (Form AL-23R) have been drafted as a standard to augment the requirements of the Code for rural wiring. The cooperatives or their inspectors should not set up additional regulations in excess of these specifications, such as special-size service entrance, special types of service equipment, etc.

All prospective members and wiring contractors should be advised of these regulations. Prospective members should be advised not to permit any contractor to give them a price on wiring or to start work on wiring until the contractor has first identified himself to the cooperative and received a copy of regulations and instructions on wiring.

SERVICE ENTRANCE EQUIPMENT

The procedure for the Furnishing and Installing of Main Service Meter Loops, AL-5R, a copy of which has been sent to your cooperative,

should be carefully read. This manual outlines in detail the policy in effect and the method to be followed regarding the installation of the meter loop equipment. It is important that this procedure be followed in order to prevent delay in your wiring program. Care should be exercised to read thoroughly all instructions so that the contracts submitted can be quickly approved. (Contract Forms "AL-5AR" for your contractors will be furnished upon request.)

WIRING INSPECTION

As previously mentioned in this manual under "Specifications and Forms," each installation must be approved and a certificate of approval filed in the cooperative office by an authorized inspector before service is connected. Cooperative officials will appreciate the necessity of such a requirement for the protection of the organization as well as the members' property. Inspectors or agencies whose qualifications are acceptable to REA have been established in every state. It is necessary that the entire cooperative personnel lend assistance in the proper execution of the inspection program. IMMEDIATELY UPON RECEIPT OF THIS MANUAL, THE COOPERATIVE OFFICE SHOULD REQUEST FROM THE APPLICATIONS AND LOANS DIVISION INFORMATION AS TO THE INSPECTION PROGRAM FOR ITS COOPERATIVE. (Note requirements and inspection methods sets forth in this manual, also Wiring Inspection Report & Certificate, Form AL-63E).

SUMMARY OF GROUP WIRING PROGRAM PROCEDURE

IMPORTANT POINTS

1. With an organized wiring program, see that the members' premises are wired before line construction is completed.

2. Consider the value to members and the cooperative of having a uniform schedule of unit prices proposed by all contractors, based upon allotting defined areas to each contractor.

   a. This saves time, travel, call backs, etc., for the contractor in solicitating jobs.

   b. Saves members the necessity of hunting for contractors.

   c. Saves members from having to depend on the irresponsible contractor who will not install a safe wiring job that will pass inspection.

   d. Places responsibility upon contractors assigned to areas to complete their work by the time forms are ready to receive electric service.

3. Member meetings held in their local communities to discuss wiring and lighting problems are of utmost importance to the success of the group wiring program.

4. Elimination of the work required by contractors to solicit jobs can only be accomplished when a majority of members fill out Wiring Agreement, Form AL-63B. It is important that the cooperative secure as many of these signed forms as possible before contractors go to work.

5. Cooperative officials, with the assistance of the inspectors, must follow up on a group wiring program continually during the construction period to insure its complete success.

Although this group wiring plan has been tried successfully in most areas of the country, situations will arise in certain areas whereby this plan cannot be followed. In some areas it may be impossible to secure enough contractors interested in working on a group wiring program. In this event, for the benefit of your members you should do everything possible to secure outside, well organized contractors who will come into your area and do the work at reasonable prices. Local contractors and

members, when they are cooperating with your group wiring program, should be satisfied that the prices are fair to both parties. Enthused by the cooperative's assistance the contractors working within their areas can carry out a fast-moving, adequate wiring program.

The suggested forms and letters, included with this booklet, are for your use. We suggest that you have these duplicated in the quantities you may need.

WIRING INSPECTOR

Requirements -

1. Shall have a thorough and practical knowledge of the rules and regulations of the National Electrical Code as approved by the American Standards Association.

2. Shall have a thorough understanding of REA requirements and be sympathetic to the farmer's wiring problems.

3. Shall have the ability to encourage cooperation between the co-op manager, wiring contractor and the farmer.

4. Shall make his inspections and reports promptly.

Inspection Methods -

Visual or mechanical inspection of wiring installations will not be satisfactory. The inspector shall use a suitable test set to check the insulation resistance between conductors of each part of the wiring system, and between each conductor and the ground. He should also check polarities at outlets, especially lampholders. These tests are to be made with all lamps and other equipment removed from the system.

He should then check the mechanical features of the installation as follows:

1. Are service wires in good shape, properly attached to and insulated from building?

2. Are wires properly bushed at entrance with proper drip loops formed?

3. Are service entrance conductors large enough for load?

4. Is proper switch or circuit breaker provided at entrance?

5. Does entrance switch have sufficient capacity? Is it properly located, and readily accessible?

6. Are proper fuses or circuit breakers provided at entrance and are all fuse blocks enclosed as required?

7. Is secondary system and/or switch cabinet permanently and effectively grounded at entrance point?

8. Is grounding conductor and electrode of proper material and size?

9. Is grounding conductor properly connected to service wire neutral and to grounding electrode?

10. Is grounded conductor of the circuit connected to the screw shall contact or identified terminal of sockets, fixtures or appliances?

11. Is there a fuse or circuit breaker installed in the grounded conductor of the system or where not permitted?

12. Is the grounding conductor and connection suitable protected from mechanical injury?

13. Are any single pole switches installed in the neutral or grounded side of interior wiring system?

14. Are non-current carrying metal frames or parts of equipment grounded where required?

15. Are metal switch cabinets, conduits or other metal armor properly bonded or grounded?

16. Are fuse bases equipped with adapters for, or equipped with type "S" fuses are required?

17. Are all fuses correct size in rated amps. to protect circuits properly?

18. Are wires or cables attached with wood cleats, stapes or nails?

19. Are all wires properly bushed through walls, floors or partitions?

20. Are all wires or cables sufficient distance from grounded pipes or metal work, and properly protected?

21. Are all joints soldered and taped properly?

22. Are any wires against or too close to woodwork?

23. Are all wires properly separated, and not installed on cleats in attics or concealed spaces?

24. Are all wires or cables in attics or elsewhere properly installed and protected from mechanical injury?

25. Are wires, cables or conduits tight and properly attached with suitable fittings at boxes or cabinets, attached rigidly in position and supported at sufficiently frequent intervals?

26. Are proper materials used in damp or wet locations?

27. Are wires properly bushed where entering or leaving cabinets, junction or outlet boxes?

28. Are cross-over tubes or insulators properly fastened in place, and are they used when required?

29. Are any wires drawn into unapproved conduits or pipes?

30. Are covers or fixtures provided on all junction, outlet or switch boxes?

31. Are all flush switches or receptacles enclosed in approved outlet boxes?

32. Are proper tramsition fittings used where wires change from knob-and-tube or cleat work to other methods of wiring?

33. Are joints, splices or tape with non-metallic sheathed cable, armored cable, or conduits enclosed in approved outlet, junction or switch box?

34. Are all wires or cables protected where subjected to mechanical injury?

35. Is one conductor identified and connected to grounded service conductor for every circuit of the wiring system?

36. Is flexible tubing (circular-loom) used where required, fastened into outlet box and run over conductor to last knob or support?

37. Are all connections at fuse, switch or terminal connections tight? Are fuse blocks or switches in good condition?

38. On open cleat work, do all switches or receptacles have sub-bases under wires?

39. Are any flexible cords in bad shape, hung on metal hooks or nails, run under rugs, run through floors or partitions, used as circuit wire or other than as pendants?

40. Are all joints under canopies or in fixtures properly soldered and taped, and made with approved splicing devices?

41. Are all lamp sockets or receptacles in good condition and properly bushed?

42. Are all flexible cords standard (labeled)?

43. Are any flexible cords used in concealed places?

44. Are all fixtures, rosetts or receptacles properly supported? Have any broken loose from supports?

45. Are any wires or flexible cords in contact with metal fixture canopies, or not properly bushed or protected?

46. Are any flexible cords connected to circuit wires without proper fixture or support?

47. Are any live ends of wires or flexible cords hanging loose?

48. Are any pendants or lamps ornamented with paper or inflammable materials?

49. Have any gas filled lamps been installed in closets where they are liable to contact clothing or other combustible material?

50. Are solid wires used as conductors in swinging or movable lamps or other portable devices?

51. Are lamps in hay mows and similar locations enclosed in suitable fixtures for the location?

52. Are portable cords used in farm outbuildings reinforced and suitable for the purpose?

53. Have you checked the area of buildings and determined the following:
    (a) Number of branch circuits required?
    (b) Number of receptacle outlets needed in each room?
    (c) Special appliance circuits needed for major equipment?
    (d) Proper size of feeders, mains, and main service equipment?
    (e) Checked size of conductors necessary to overcome voltage crop?

(Letter No. 1)

Have you wired your farm?

If not, read this letter carefully.

BIG COUNTY ELECTRIC COOPERATIVE

SPRINGDALE, NORTH CAROLINA

LOW COST SAFE WIRING PROGRAM

_____, 19__

Dear Member:

This letter explains the details of the low cost Wiring Program your cooperative has worked out for your benefit. Your board and management feel that as a co-op member you are entitled to all the help and protection your co-op can give you in obtaining safe and adequate wiring at a reasonable price. To that end we invite your prompt cooperation.

The first thing we want to call to your attention is that your cooperative will furnish and install, and pay for, your main service entrance. It will be your obligation to have your buildings wired, to furnish inside switch boxes, building entrance cable and conductor wire between buildings or between yard pole and buildings, depending on which type of main service entrance you select. The wiring of your premises must be completed by the time the high line is energized.

Note to Coop. (When one contractor is selected by competitive bidding, following paragraph is used in letter to member.)

To obtain rock bottom prices and to save members the trouble of locating someone to wire their farm premises, competitive bids were taken from all interested contractors. After careful consideration of all bids the _____ was selected as the wiring contractor for the following reasons:

1. Lowest prices
2. Has competent electricians with long experience in REA wiring.
3. Carries full insurance for your protection.
4. Guarantees that farm wiring will keep up with line construction.

Note to Coop. (When several contractors are selected as result of negotiated bidding following paragraphs are used in letter to member.

To obtain rock bottom prices and to save members the trouble of

locating someone to wire their farm premises, a meeting of interested contractors was called to discuss wiring costs in detail. The cooperative management was able at this meeting to secure agreement with the following contractors to wire members' premises at low unit prices based entirely on a mass wiring program.

NAME OF CONTRACTOR	ADDRESS
_____	_____

Each contractor will be assigned a group of houses to wire in a specific area. The following contractor has been assigned to your area. _____

SAFE WIRING:

Your Board of Directors has adopted the standard REA wiring specifications providing for all requirements of the National Electrical Code, so that the lives of your family and your property will be protected. All wiring must be done in accordance with these specifications and be INSPECTED and APPROVED before service can be received. Inspection will be handled through your cooperative office.

HOW TO GET YOUR FARM WIRED:

1. Construction can proceed only as wiring agreements are signed. Therefore, you are requested to fill out and return the attached Group Wiring Agreement form. To establish an orderly schedule of wiring and construction, it is necessary that this form be returned not later than _____. A self-addressed envelope is enclosed for your convenience.

2. With respect to the agreement form, it should be understood that a final contract will be reached when the contractor calls on you and the number of units or outlets and other wiring is established and the total cost approved by you.

3. A schedule of prices is also attached for your guidance. It is your privilege to place your wiring with the contractor of your choice. However, we urge your cooperation in placing your wiring with the (cooperative's contractor) or (contractor assigned to wire in your area) who is prepared to wire all your farm buildings adequately and safely, at the lowest possible cost. The contractor will call on only those requesting him to in the form mentioned above.

4. Wiring Loans - - Your cooperative has made funds available to loan to members of approved credit standing for farm wiring and purchase of equipment. This money will be loaned to members at 4 per cent interest. The down payment will be 20 per cent, and the remaining 80 per cent will be financed over a period of _____ months. (Note to Co-op: Insert proper number of months as permitted by Federal Reserve Board regulations applicable at the time this letter is sent out. Refer to Regulation "W", copy of which may be secured from your Federal Reserve Bank.) the loan plan makes it possible for those who lack sufficient funds at present to obtain an adequate wiring job and take full advantage of the electric

power to be made available. Please indicate your financing needs on the form attached.

5. All farms now wired for a home electric plant may expect that some changes will be required before high line service can be connected. An inspector will be sent from your cooperative's office to determine what changes are necessary. Do not, however, delay in filling out and returning the wiring agreement form.

Your cooperative is planning a series of group wiring meetings to acquaint you with the details of adequate and safe wiring. At these meetings the advantages of electric power and the use of Home and Farm appliances will be explained. You will be advised later the time and place of these meetings. We urge every member to attend.

Very truly yours,

J. C. Doe, Manager
BIG COUNTY ELECTRIC COOPERATIVE

P.S. Remember to wire adequately now so that you can effectively use electric power later.

(Letter No. 2 - Send out after meeting with contractors)

Dear Member:

We have good news for you. That new servant, "ELECTRICITY," will soon be right at your buildings. However, the contractor who builds the high-line will not wire your house and outbuildings. This wiring is up to you. You pay the wiring cost. Your buildings will be wired the way you want them, except that all wiring must be adequate, efficient and safe. Your Cooperative has an inspection program that will assure you the correct type of wiring job.

How should your house and other buildings be wired? How many outlets per room? How many circuits are needed and why? What about the size of wire to use? How much will this wiring job cost? These are some of the questions that I know you have thought about.

In the past, homes have been wired at all kinds of prices. Some electricians have done a good job, others have not. In most cases, the costs have been too high. The reason was that there was no definite plan for wiring groups of members' premises at the same time. Wiremen had to drive great distances to their work and materials had to be bought in small quantities. This naturally caused farmers to pay more for wiring.

In a cooperative, we all work together, and help each other, so we called all the local electricians to a meeting. A uniform low price was agreed on. We got this low price for you and other members because all the wiremen agreed to use the group wiring plan. They agreed on the number of homes each would wire. These homes were grouped into communities. This means that instead of the electrician wiring a house in one neighborhood, and then perhaps driving fifty miles to the next wiring job, he will work in one neighborhood, going from farm to farm.

We also went over the latest safe wiring methods with electricians. All the electricians cooperating in this group wiring plan have been approved by your elected cooperative officials.

If you use the wireman assigned to your area, you will get a good, safe wiring job at the lowest possible cost.

If you have a personal preference for an electrician, different from the one assigned to your neighborhood, you may, of course, use him.

Enclosed you will find the wiring prices agreed upon at this meeting of electricians. We suggest you keep these prices for your information.

At a later date, a meeting will be held in your neighborhood to discuss and demonstrate wiring. Watch for this meeting date. You will want to be present.

Yours cooperatively,

Manager

(Letter No. 3 - To send out several days before meeting date.)

Dear Member:

Electricity is coming! It won't be on your farm and in your home though, until you get your premises wired.

If you have never used electricity before you may not know much about farm wiring but it would be a shame if, after waiting this long for electric service, you received a poor, inadequate wiring job at a high cost.

A meeting will be held at the _____ farm
_____ miles _____ of_____ _____at _____.

This is just a neighborhood meeting so shut off that tractor or turn your team loose and come to this meeting. Come just as you are and bring the family.

You will see a house being wired. You will be able to better understand what makes a wiring job good or bad. You will find out what honest wiring should cost. We're all working together, the cooperative way, to bring electricity into rural areas. The same cooperative spirit will enable us to get safe, adequate wiring at a rock-bottom price. There is no obligation to come in on your co-op's Wiring Program, but we urge you to consider it. The advantages are considerable.

Your neighbors, Mr. and Mrs._____, cordially invite you to come to their house on the above date and hour.

Cooperatively yours,

Manager

(Note: This letter could be mimeographed with meeting place, date, etc., left blank, with place, date, etc., typed in later and sent as needed to neighborhood groups. This would result in people attending their own group meeting.)

(Letter No. 4 - Suggested card to send out to arrive just before meeting.)

Dear Member:

Don't forget that important house wiring and electrical demonstration meeting to be held at _____
(give place, day, date and hour.)

_____

Bring the family. You will have a good time and learn a lot about farmstead wiring. This will help you when you plan your own wiring job.

Cooperatively yours,

Manager

(Note: This card could be printed or mimeographed with meeting place, date, etc., left blank, with place, date, etc., typed in later and sent as needed to neighborhood groups. This would result in people attending their own "group" meeting.)

AL-63B

GROUP WIRING AGREEMENT

I _____ desire the electric contractor (selected by the cooperative) to wire my premises in accordance with the established price schedule and Rural Electrification Administration specifications as adopted by the (_____)Cooperative. I understand that the Contractor will call at my farm and will discuss with me the location and the number of outlets and other wiring which I may desire. The total cost of the complete job must meet with my approval before work starts.

Date _____ Signature _____

Address _____

_____

County _____

Please give the following information to assist us in planning the Wiring Program.

1. Are any of your buildings now wired? _____
   (a) For home light plant? _____
   (b) For high line service (110-220 volts)? _____
   (c) Which buildings are already wired? _____

   _____

2. If you have not signed the above agreement, please state what arrangements you have made for wiring.

   _____

   _____

3. Do you desire REA financing? _____

Date _____ Signature _____

Address _____

_____

County _____

AL-63C

CONTRACTOR'S PROPOSAL FOR WIRING INSTALLATION

(1)

To consumers to be served by the rural electric distribution system of _____ (hereinafter called the "Cooperative.")

The undersigned (hereinafter called the "Bidder") hereby proposes to furnish and install electric wiring in the premises of consumers to be served by the Cooperative and to furnish all labor, materials, tools and equipment therefor in accordance with the Standard Rural Electrification Administration Specifications for Wiring at the following unit prices:

INSTALLATION UNITS — APPROVED W. P. SERVICE CABLE

Service Entrances, Main and Outbuilding - 2#8 and Larger
(Performance grade insulation on conductors)

All Service Entrances to be figured from meter loop service disconnect furnished by the Cooperative in cases where the meter loop is installed on the main building. Inside distribution panels need only provide for branch circuit over-current protection. Meter loop contractor installs grounds.

Service entrances to all other buildings shall be complete with service head, ground, main over-current protection and disconnect as required by the National Electrical Code as well as branch circuit over-current protection.

Cable figured on basis of 15 feet standard. Greater or lesser amounts shall be added or deducted for as noted.

		Main				
	A.W.G.	Poles	Blades	Fused	Branch Circuits	Price
2 wire	8	2	1	30 amps	2 fused.....	
2 wire	8		*		2 fused.....	
2 wire	8		**		2 breakers.....	
3 wire	6	3	2	50 amps	4 fused.....	
3 wire	6		*		4 fused.....	
3 wire	6		**		4 breakers.....	
3 wire	6	2	2	50 amps.	4 ⌿ R fused.....	
3 wire	6		*		4 ⌿ R fused.....	
3 wire	6		**		4 ⌿ R breakers.....	
3 wire	6	2	2	50 amps	4 ⌿ R - WH Fused...	
3 wire	6		*		4 ⌿ R - WH Fused...	
3 wire	6		**		4 ⌿ R - WH breakers	

(Fused mains and range circuit in excess of 30 amperes may be of pull-out type in lieu of switch blades and fuses.)
(*) Main disconnect and over-current protection installed at meter.
(**) Same as (*) for house meter loops. When metered on yard-pole this installation limited to six sets of breakers.

CONTRACTOR'S PROPOSAL FOR WIRING INSTALLATION
(2)

Prices increased or reduced for S. E. cable in excess of or less than 15 feet as follows:

No. 8 $_____ per foot
No. 6 $_____ per foot

Outbuilding Services

2 wire No. 10 AWG and smaller, 30 amp. fused - 1 branch circuit.....Each
2 wire No. 10 AWG and smaller, 15 amp. breaker - 1 branch circuit.....Each

Yard Pole Meter Loops in Conduit

5 Wire No. 6 AWG.....
5 Wire No. 4 AWG.....
5 Wire No. 2 AWG.....

House Meter Loops-Cable

2 Wire No. 8 AWG.....
3 Wire No. 6 AWG.....

(For specifications and drawings see AL-5A)

House Wiring

(Wiring Method_____)

Ceiling and side wall outlets, inside and out.....Each
Switch Outlet, S. P. Switch and flush type switches and plate.....Each
Switch Outlet, 3-way Switch and Plate.....Each
Duplex convenience receptacles and plate.....Each
Electric range outlets with 20' cable (¢ additional per ft. over 20 feet.....Each
Bell transformer and bell.....Each

Hanging lighting fixtures (providing can be hung while contractor is on job).....each.

Outbuilding Wiring

(Wiring Method_____)

1. Light Outlets.....Each
2. Surface type switch outlets.....Each
3. Duplex convenience receptacles.....Each
4. Hay mow light (conduit where needed).....Each
5. Yard light and 2 3-way switches.....Each
6. Yard light and S.P. Switch.....Each
7. Water pump outlet.....Each
8. Portable utility motor outlets 1 h.p. 20' cable.....Each
9. Portable utility motor outlets 3 h.p. 20' cable.....Each
10. Portable utility motor outlets 5 h.p. 20' cable.....Each
11. Stationary motor outlets 1 h.p. 20' cable.....Each
12. Stationary motor outlets 3 h.p. 20' cable.....Each
13. Stationary motor outlets 5 h.p. 20' cable.....Each

(Item 4) This light may be installed in a gasketed fitting mounted in the cover of an ordinary outlet box to which a dust-tight globe may be inserted. Where the complete installation is made in such a location as to be subject to mechanical injury, the globe shall also be enclosed in a suitable guard.

(Items 7-8-9-10-11-12 and 13) These shall either be installed with a 3-wire cable, one conductor of which may be identified as the grounding conductor or with a third conductor run outside the cable or conduit assembly as instructed in the last paragraph of specification 4, page 8. Receptacle outlets installed in damp locations, such as basements, dairy barns, etc., shall be of polarized type, from which the grounding conductor may be bonded to the frame of portable or stationary equipment.

Outside Wiring — Weather-proof Wire

No. 12 W. P. wire in place per ft. _____
No. 10 W. P. wire in place per ft. _____
No. 8 W. P. wire in place per ft. _____
No. 6 W. P. wire in place per ft. _____
No. 4 W. P. wire in place per ft. _____

Inspection fee in addition to above prices _____
(Such inspection fee shall be deposited at the Cooperative office for payment to the inspector at the time notice is given in writing that the installation is ready for inspection.)

It is agreed that work shall be commenced within ( ) days after the acceptance of this proposal by the consumer and shall be completed within ( ) months thereafter.

Attached hereto and made a part hereof is a statement entitled "Bidder's Qualifications" showing that the undersigned (a) maintains a permanent place of business: (b) has adequate plant equipment to properly and expeditiously perform said contract: (c) has sufficient financial resources to meet all obligations incident to the performance of said contract: and (d) has appropriate experience therefor.
The undersigned hereby represents and warrants that all statements set forth therein are true.

The masculine personal pronoun as used herein may be interpreted as feminine or neuter.

Dated this day of , 194 . (j)

Signature of Bidder _____ (k)

By _____ (k)

Title of Officer _____ (k)

Address of Bidder _____ (l)

CONTRACTOR'S PROPOSAL FOR WIRING INSTALLATION

(4)

ACCEPTANCE OF PROPOSAL

To _____, _____,
(name of Contractor) (address)

I hereby accept your proposal dated _____ to furnish and install electric wiring in my premises to be served by the rural electric distribution system of _____ for the unit
(name of Cooperative)
prices and on the terms and condition stated therein.

_____
(Consumer)

_____
(Address)

AL-63D

Department of Agriculture RURAL ELECTRIFICATION ADMINISTRATION	AGREEMENT TO WIRE	DATE: _____

TRACT NO. _____

MAP NO. _____

TO THE MEMBERS OF THE

_____

Please fill out that part of the following form that applies to you----

_____

FOR THOSE WHO HAVE PREMISES WIRED AT THIS TIME:

My premises are wired and ready for inspection

Date: _____ _____
Name of Member

_____

FOR THOSE WHO DO NOT HAVE THEIR PREMISES WIRED:

Upon my promise to wire my premises and take electric service when made available to me (which action on my part would make the construction of an electric distribution line in my community feasible), the has borrowed funds from the Federal Rural Electrification Administration to build an electric distribution system to serve my property.

I therefore hereby agree to wire my premises by the _____ day of _____, 19___, or when notified by the in accordance with the requirements of the Rural Electrification Administration, so that I will be ready to take electric service when the lines are ready to serve me, or in case my premises have not been wired by that time, I hereby agree to pay the minimum monthly bill each month until my premises are so wired and thereafter as per service agreement which I have previously signed.

Date: _____ _____
Name of Member

Please sign and return at once to the

_____
(Name of Cooperative)

_____
(Address)

FORM AL-63E

WIRING INSPECTION REPORT & CERTIFICATE

This is a suggested form of Inspection Report. If it meets your requirements, have sufficient copies mimeographed to supply the inspector. These should be made out in triplicate (in some states four copies are needed) and distributed to each of the following:

1-Cooperative; 2-Member; 3-Retained by Inspector; 4-State Authority

WIRING INSPECTION RECORD

NAME OF MEMBER _____ ADDRESS _____

NAME OF ELECTRICIAN _____ ADDRESS _____

House	Rej.	O.K.	Other Buildings	Rej.	O.K.	Outside Wiring	Rej.	O.K.
Service Entrance			Service Entrance			Meter Loop		
Ground			Ground			& Socket		
Load Center			Load Center			Ground		
Branch Circuits			Branch Circuits			Wire Size		
Light			Wire Size			Connections		
Utility			Outlets			Clearance		
Power			Junctions			Yard Light		
Wire Size			Connections			Materials & Workmanship		
Outlets			No. Outlets at Inspection					
Junctions			Materials and Workmanship					
Connections								
No. Outlets at Inspection								
Materials and Workmanship								

This Inspection was made this _____ day of _____, 19___.

CERTIFICATE: Signed _____ Inspector

Town Date 19___.

This is to certify that I have this date inspected and tested the wiring and equipment installed by _____ on the premises of _____ situated _____ and found same to be in accordance with applicable Rules and Regulations of the Rural Electrification Administration, the latest edition of the National Electrical Code, and the applicable State and local laws and regulations.

This certificate in no way relieves the property owner or contractor from responsibility for defects which may develop at a later date.

_____
Inspector

FORM AL-63F

RECORD OF WIRING & LIGHTING FIXTURE INSTALLATION

Name of Consumer _____ Cooperative _____

Address _____ Address _____

Residence	Porches	Halls	Living Room	Dining Room	Kitchen	Pantry	Basement	Bath	Bedrooms	Closets	Total Outlets	Unit Price	Total Installed Price
Light Outlet													
Switch S. P.													
Switch 3-W													
Conv. Outlet													
Range Outlet													
Water Heater Outlet													
Lighting Fixtures													

1. Residence Total _____

OUTBUILDINGS	Barn	Corn Crib Shed	Poultry House	Brooder House	Hog House	Garage	Other Bldgs.	Total Outlets	Unit Price	Total Installed Price
Light Outlet										
Switch S. P.										
Switch 3-W										
Conv. Outlet										
Motor Outlet										
Haymow Outlet										
Lighting Fixtures										

2. Outbuildings Total _____

Services (Incl. Ground)	TYPE: Fused	TYPE: Circuit Breaker	Residence	Barn	CORN Crib	Shed	Poultry House	Brooder House	Hog House	Garage	Total Services	Unit Price	Total Installed Price
3 W. #6 - 60A													
3 W. #8 - 30A													
2 W. #8 - 30A													
2 W. #12 - 15A													
Pole Meter Loop													
Additional Cable													
Bldg. Takeoff													

3. Total Services

Outside Wiring & Lighting

Yard Light 2 - 3 W. S.W.

Yard Light 1 - S.P. S.W.

Wire #4 W.P. _____ Ft. _____

Wire #6 W.P. _____ Ft. _____

Wire #8 W.P. _____ Ft. _____

Wire #10 W.P. _____ Ft. _____

Wire #12 W.P. _____ Ft. _____

4. Total Outside _____

5. Inspection Fee _____

TOTAL INSTALLED WIRING PRICE $_____
(Add 1, 2, 3, 4 and 5)

_____
Contractor